

PATENT

Appl. No. 10/041,845  
Amdt. dated September 22, 2004  
Reply to Office Action of August 24, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Previously presented) A method for inducing insulin gene expression in cultured pancreatic cells, the method comprising the steps of:
  - (i) expressing a recombinant NeuroD/BETA2 polynucleotide and a recombinant PDX-1 polynucleotide in pancreatic cells that have been cultured under conditions such that the pancreatic cells are in contact with other cells in the culture; and
  - (ii) contacting the cells with a GLP-1 receptor agonist, thereby inducing insulin gene expression in the pancreatic cells.
2. (Original) The method of claim 1, wherein the GLP-1 receptor agonist is a GLP-1 analog.
3. (Original) The method of claim 1, wherein the GLP-1 receptor agonist has an amino acid sequence of a naturally occurring peptide.
4. (Original) The method of claim 3, wherein the GLP-1 receptor agonist is GLP-1, exendin-3, or exendin-4.
5. (Original) The method of claim 1, wherein the cells are cultured as aggregates in suspension.
6. (Previously presented) The method of claim 1, wherein the cells are  $\beta$ -cells.
7. (Previously presented) The method of claim 1, wherein the cells express a recombinant oncogene.

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8. (Previously presented) The method of claim 7, wherein the cells express more than one recombinant oncogene.

9. (Previously presented) The method of claim 1, wherein the cells express a recombinant telomerase gene.

10. (Previously presented) The method of claim 6, wherein the  $\beta$ -cells are  $\beta$ lox5 cells.

11. (Canceled)

12. (Previously presented) A stable culture of pancreatic cells, wherein the pancreatic cells are in contact with other cells in the culture and cultured as aggregates in suspension, wherein the pancreatic cells express a recombinant PDX-1 polynucleotide and a recombinant NeuroD/BETA2 polynucleotide, and wherein insulin gene expression is stimulated in the pancreatic cells when exposed to an effective amount of a GLP-1 receptor agonist.

13. (Original) The culture of claim 12, wherein the GLP-1 receptor agonist is a GLP-1 analog.

14. (Original) The culture of claim 12, wherein the GLP-1 receptor agonist has an amino acid sequence of a naturally occurring peptide.

15. (Original) The culture of claim 14, wherein the GLP-1 receptor agonist is GLP-1, exendin-3, or exendin-4.

16. (Canceled)

17. (Previously presented) A stable culture of pancreatic cells, wherein the pancreatic cells are in contact with other cells in the culture, wherein the pancreatic cells express a recombinant PDX-1 polynucleotide and a recombinant NeuroD/BETA2 polynucleotide, and wherein insulin gene expression is stimulated in the pancreatic cells when exposed to an effective amount of a GLP-1 receptor agonist, and wherein the pancreatic cells are  $\beta$ -cells.

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18. (Previously presented) The culture of claim 12, wherein the cells express a recombinant oncogene.

19. (Previously amended) The culture of claim 18, wherein the cells express more than one recombinant oncogene.

20. (Previously presented) The culture of claim 12, wherein the cells express a recombinant telomerase gene.

21. (Previously presented) The culture of claim 17, wherein the  $\beta$ -cells are  $\beta$ lox5 cells.

22-30. (Canceled)

31. (Original) An endocrine pancreas  $\beta$ -cell comprising a recombinant PDX-1 polynucleotide and a recombinant NeuroD/BETA2 polynucleotide.

32. (Original) The  $\beta$ -cell of claim 31, wherein the  $\beta$ -cell is a human  $\beta$ -cell.

33. (Original) The  $\beta$ -cell of claim 31, wherein the  $\beta$ -cell expresses a recombinant oncogene.

34. (Original) The  $\beta$ -cell of claim 33, wherein the  $\beta$ -cell expresses more than one recombinant oncogene.

35. (Original) The  $\beta$ -cell of claim 31, wherein the  $\beta$ -cell expresses a recombinant telomerase gene.

36. (Previously presented) The method of claim 6, wherein the  $\beta$ -cells are human  $\beta$ -cells.

37. (Previously presented) The culture of claim 17, wherein the  $\beta$ -cells are human  $\beta$ -cells.

38. (Previously presented) The culture of claim 17, wherein the GLP-1 receptor agonist is a GLP-1 analog.

39. (Previously presented) The culture of claim 17, wherein the GLP-1 receptor agonist has an amino acid sequence of a naturally occurring peptide.

40. (Previously presented) The culture of claim 39, wherein the GLP-1 receptor agonist is GLP-1, exendin-3, or exendin-4.

41. (Previously presented) The culture of claim 17, wherein the cells express a recombinant oncogene.

42. (Previously presented) The culture of claim 41, wherein the cells express more than one recombinant oncogene.

43. (Previously presented) The culture of claim 17, wherein the cells express a recombinant telomerase gene.